



MINUTES

Clear Roads 2025 Spring Technical Advisory Committee Meeting

Pooled Fund Project, TPF-5(479)

Tuesday, April 15 to Thursday, April 17, 2025. (Delta Hotels Richmond Downtown; Richmond, Virginia)

In-Person Attendees

Ryan LaQuay – AASHTO
Marcus Zimmerman – Alaska
Kevin Hensley – APWA
AJ Johnson – California
Mike Chapman – Colorado
Aiden Neely – Connecticut
Kirsten Seeber – CTC & Associates
Greg Waidley – CTC & Associates
Alastair Probert – Delaware
Ty Winther – Idaho
Nick Evans – Indiana
Craig Bargfrede – Iowa (Chair)
Jim Frye – Kansas
Eric Bowman – Kentucky
Chris Landry – Maine
Rynell Hyman – Maryland
Mark Goldstein – Massachusetts
Carl Fedders – Michigan
Joe Huneke – Minnesota
Ryan Sodd – Minnesota
Paul Denkler – Missouri
Doug McBroom – Montana (Vice Chair)
Mike Mattison – Nebraska
Andrew Lawrence – Nevada

David Gray – New Hampshire
Samantha Canulli – New Jersey
Joe Thompson – New York
Aaron Murra – North Dakota
Dean Alatsis – Ohio
Patti Caswell – Oregon
Dan Whetzel – Pennsylvania
Matthew Ouellette – Rhode Island
Dan Varilek – South Dakota
Matthew Heinze – Texas
Jessica Andrews – Utah
Todd Law – Vermont
Brandy Borja – Virginia
Courtney Cooke – Virginia
Kaitie O'Hara – Virginia
AJ Younes – Virginia
James Morin – Washington State
Jeff Pifer – West Virginia
Emil Juni – Wisconsin
Wayne Shenefelt – Wyoming
Virtual
Jeremy McGuffey – FHWA
Randi Feltner – Kentucky
Jasmine Dondlinger – Nebraska (Chemist)

Materials Posted

Agenda	Research In-Progress Update
Budget	Communications Report
Attendees List	PDH Certificate
Research Proposals List	Expense Report and Guidelines
Research Scoring Sheet	Rooming and Airport Arrival Logistics

Tuesday, April 15, 2025

Introductions and Meeting Objectives – Craig Bargfrede

- Clear Roads chair, Craig Bargfrede, facilitated member introductions and reviewed the meeting agenda.



research for winter highway maintenance

- Joe Williams, Virginia DOT State Infrastructure Manager, providing opening remarks and a welcome to Virginia.
- States with new representatives
 - Gabe Alvarado, Arizona (not in attendance)
 - Kristy Brod, Illinois (not in attendance)
 - Nick Evans, Indiana
 - Jim Frye, Kansas
 - Steven Gauthe, Oklahoma (not in attendance)
- States with temporary replacements standing in for representatives
 - Eric Bowman, Kentucky
 - Rynell Hyman, Maryland
 - Ryan Sodd, Minnesota
 - Samantha Canulli, New Jersey

Research and Synthesis Idea Presentations

Nine (9) research proposals and six (6) synthesis proposals were presented and discussed by TAC members. After all the proposals were presented, each voting member of the TAC submitted scores for each research / synthesis project based on each project's own merit, using a 1-5 scale (5 being the greatest need). Those votes were tallied after day one of the meeting and presented at the beginning of day two.

1. Benefit / Cost Analysis of AVL/GPS Systems Implementation

- Presenter: Emil Juni, Wisconsin
- Project Summary: New features and technological advancements in AVL/GPS technology and services provide improved services than were available a decade ago. State DOTs have been adopting different services provided by different vendors, with new features introduced and new methods and ways of implementation. Agencies have different AVL/GPS needs, and with the high capital cost of AVL implementation, a study of the true cost of implementation and the benefits they provide can give agencies information that will help them decide. The goal of the project is to provide agencies with a guide that can help them make decisions regarding AVL/GPS systems implementation.

2. Updated Training Videos and Manual for Best Practices and Techniques in Clearing Different Interchange Configurations and Other Geometric Layouts

- Presenter: Eric Bowman, Kentucky
- Project Summary: Clear Roads project 14-03 addressed the many existing and then-new interchange configurations (Diverging Diamond, Roundabout, SPUI, etc.) that can be challenging for operators and managers to clear. Training materials including a manual, reference cards, and videos were developed to address many intersection types. An update is necessary given that it has been 10 years since this project was proposed and other intersection types exist (RCUT, Continuous Green T, etc.). The goal of this project is to create updated training deliverables to address any new types of interchanges or updated best practices.



research for winter highway maintenance

3. Synthesis – Use and Performance of Bridge Deicing Systems, to include Fixed Automated Spray Technology (FAST) Systems, Geothermal anti-icing and use of Non-Chloride De-Icers on Bridge Decks to Reduce Corrosion to Bridge Components

- Presenter: Mark Goldstein, Massachusetts and Todd Law, Vermont
- Project Summary: This synthesis will identify manufacturers of FAST / Geothermal / Icephobic coating application systems; survey DOTs, larger municipalities (APWA), PIARC, and NPRA to determine current practice related to the use of FAST / Geothermal / Icephobic coating application systems and/or alternatives to chloride-based deicers; and provide case studies on agency experience with the use of FAST/Geothermal systems.

4. Considerations and Technical Requirements for a Weather Services Contract Request for Proposals

- Presenter: Mark Goldstein, Massachusetts
- Project Summary: A state DOT winter maintenance program's best friend is a reliable weather forecasting partner. To optimize weather forecasting services contract's value, it is important to consider what services to request and the resultant contract's related technical requirements. The purpose of this project is to develop an RFP that maximizes the value of the weather forecasting services provided to state DOTs.

5. Synthesis – Best Practices for Usage of AVL and Other Vehicle Monitoring Technologies in Employee Relations

- Presenter: Andrew Lawrence, Nevada
- Project Summary: AVL technology is often implemented without fully considering its potential impacts on employee relations and workforce management, as well as the potential unintended uses of the data it generates. This synthesis will compile the current status of AVL policies related to employee relations and workforce management, while also identifying best practices and usage guidelines. The report will explore whether such data is utilized in cases of disciplinary actions regarding policy violations, illegal behavior, or low productivity, as well as whether it is employed to reward good practices.

6. Synthesis – Post-Storm Snow Removal

- Presenter: Carl Fedders, Michigan
- Project Summary: During a snowstorm, snow gets pushed to areas of the right-of-way where it accumulates. The purpose of the synthesis is to gather recommended practices, policies, or training resources employed by state and other road-maintenance agencies related to how they manage post-storm snow removal. What practices and equipment are utilized? What are the resource costs and timeframes used to clear gore areas and shoulders, which include bridge decks, median barrier walls, and guardrails? Also, what are the factors that drive each agency's policy on post-storm / beyond traveled lanes clearing?

7. Zero-Velocity Spreader Savings Quantification

- Presenter: Carl Fedders, Michigan
- Project Summary: MDOT is currently studying Winter Maintenance Truck consistency to ease training and truck maintenance statewide. Zero-velocity spreaders are utilized within one of the seven MDOT regions and opinions on the value differ greatly among supervisors, operators, and mechanics. MDOT is interested in quantifying and justifying their use along with identifying use cases. The goal of this project is to Quantify the savings related to the application of salt, if any,



research for winter highway maintenance

experienced using a zero-velocity spreader compared to a traditional spreader and identify optimal use cases.

8. Snowplow Truck Washing Facility Design Templates and Snowplow Truck Washing RFQ Contract Template

- Presenter: Matthew Ouellette, Rhode Island
- Project Summary: Snowplow trucks operate in harsh environments and it's a constant challenge to clean plow trucks efficiently and effectively in between storms and at the end of the winter season. Building off Clear Roads Project 16-S1 (Snowplow Truck Washing Practices), the goal of the project is to Evaluate and develop a set of two scalable truck washing facility designs that can be used to further develop and bid out truck washing facility construction projects; and evaluate and develop performance criteria, technical requirements and other considerations that can be used to develop Request for Quotes (RFQ) contracts to procure truck washing vendors.

9. Ice Melting Capacity Test Method for Solid Deicers

- Presenter: Patti Caswell, Oregon
- Project Summary: An Ice Melting Capacity test method has been developed, with high repeatability/reproducibility, for liquid deicers that is rugged and low cost. Currently, the standard referenced test method for solid deicers is SHRP H-205.1; however, the variance of test results is quite high. A new or modified test method should be developed with improved variance. The goal of this project is to develop a new test method or modify an existing test method to determine ice melting capacity for solid deicers that has high repeatability/reproducibility.

10. Update to Test Method 5 (Corrosion Effectiveness)

- Presenter: Patti Caswell, Oregon
- Project Summary: The purpose of this project is to establish coupon MPY (corrosion rate) variation limits and corrosion effectiveness repeatability/reproducibility requirements that can be incorporated into Test Method 5 from the Clear Roads Guidance Document for Material Qualified Projects List, Specifications, Test Methods and Product Purchasing. The project will address three issues with the current test method.

11. Synthesis – Friction Test Method

- Presenter: Patti Caswell, Oregon
- Project Summary: At certain temperatures and humidity conditions some deicers may reduce friction, causing slippery conditions. Therefore, in order to be included on the Clear Roads QPL liquid deicers must undergo friction testing. This synthesis will summarize friction test methods available. Currently, Clear Roads is not able to include frictional analysis in its evaluation of liquid deicers for inclusion on the QPL. A friction test method that can be conducted and referenced by the QPL will allow the QPL to resume evaluating new products for this characteristic. A survey will provide current friction testing practices.

12. Developing a Road Condition Standard

- Presenter: Doug McBroom, Montana
- Project Summary: Many states and locales have developed a color scheme to relay road weather conditions to road users. The colors used are at the discretion of each agency which can certainly lead to confusion and possibly safety concerns during severe weather. The goal of this project would



research for winter highway maintenance

be for the state DOTs to develop a standard road condition index through consensus which can then be adopted and promoted at the national level.

13. Synthesis – Accuracy in Winter Weather Forecasting

- Presenter: Matthew Heinze, Texas
- Project Summary: The purpose of the synthesis is to gather information on other DOTs experience with missed weather forecasts. Which is the most accurate forecast source? How do weather services determine the likelihood of a forecast? A possible addition could be information on the financial impacts to inaccurate forecasts.

14. Synthesis – Public Outreach on Snowplow Safety

- Presenter: Matthew Heinze, Texas
- Project Summary: TxDOT has seen an increase in the number of incidents involving 3rd party motorists striking state DOT snowplows and winter weather equipment. Some of these incidents involved less experienced drivers, or drivers that had not seen snowplows. There seems to be some disconnect with the public and the proper safety measures to take around winter weather equipment. The purpose of the synthesis is to gather recommended practices, policies, or resources employed by state and other road-maintenance agencies related to public outreach/education on winter weather equipment safety.

15. Correlating Lab Testing and Field Performance for Deicing and Anti-icing Chemicals (Phase II)

- Presenter: Mike Mattison, Nebraska
- Project Summary: Phase I of this project, Clear Roads 09-01 was completed in August 2010. Phase II and Phase III were proposed in that project. Determine Statistical Analysis for Correlating Laboratory and Field data and Begin Laboratory testing using Factorial Design were to be addressed in Phase II. Phase II has not been initiated. This would be a multi-phase project to develop a test method that identifies the effects of many factors and variables on performance and friction and can also be correlated to field performance. Phase I started with a comprehensive literature search to develop recommendations on how to proceed with laboratory testing methods and design.

Clear Roads Budget and Available Funds

- Income through FFY25: \$3,800,000
- Expenses through FFY25: \$3,328,646.05
- Funds available for research in 2025: \$471,353.95
 - Based on CTC contract and meetings expenses for 2026, research funds available for research in 2026 are anticipated to be \$625,000. Clear Roads approved moving as much as \$50,000 from 2026 to 2025 for research funding. This is made possible as \$50,000 contracted to CTC in 2025 is for a meeting in 2026, thus won't be invoiced until 2026.
- States behind with their contributions (still need to transfer 2024 funds): None.
- States needing to transfer 2025 funds: AZ, IL, KS, MD, MA, MN, NE, OK, OR, RI, SD, TX, UT, WA, and WY.

Recently Completed Project Report

20-06: Salt Shed Design Template

- Project Chair: James Morin



research for winter highway maintenance

- See *Spring 2025 State Reports / Industry Reports / Project Reports* under TAC Meeting Presentations on the members only page.

Indiana State Report

- Presented by Nick Evans
- See *Spring 2025 State Reports / Industry Reports / Project Reports* under TAC Meeting Presentations on the members only page.

Recently Completed Project Report

22-02: Best Management Practices for Liquid Chloride Storage and Pumping Systems

- Project Chair: Chris Landry
- See *Spring 2025 State Reports / Industry Reports / Project Reports* under TAC Meeting Presentations on the members only page.

Iowa DOT's Samsara AVL / Camera Program

- Presented by Craig Bargfrede
- See *Spring 2025 State Reports / Industry Reports / Project Reports* under TAC Meeting Presentations on the members only page.

Wednesday, April 16, 2025

Selection of 2025 Projects

Based on the rankings received, the TAC approved the following six projects, including five projects for RFP and one synthesis. The total funding is estimated at \$500,000. For a pdf document containing all of the projects proposed, visit the [All Proposed Projects](#) page.

CR 25-01 Developing a Road Condition Standard [Score: 3.472]

- Investigator: To be determined via RFP.
- Budget: \$75,000
- Chair: Doug McBroom
- Co-Chair: Dan Varilek
- Subcommittee: Matthew Heinze, Joe Thompson, Dean Alatsis, James Morin, Jim Frye, Kevin Hennes, Ty Winther, Nick Evans, Jeremy McGuffey, Aaron Murra, Randi Feltner, and Tom Peters

CR 25-02 Benefit-Cost of AVL/GPS Systems Implementation [Score: 3.072]

- Investigator: To be determined via RFP.
- Budget: \$100,000
- Chair: Emil Juni
- Co-Chair: Paul Denkler
- Subcommittee: Joe Huneke, Dan Whetzel, Mike Mattison, Craig Bargfrede, Joe Thompson, Todd Law, and Tom Peters



research for winter highway maintenance

CR 25-03 Updated Training Videos and Manual for Best Practices and Techniques in Clearing Different Interchange Configurations and Other Geometric Layouts [Score: 3.000]

- Investigator: To be determined via RFP.
- Budget: \$75,000
- Chair: Randi Feltner / Eric Bowman
- Co-Chair: Carl Fedders
- Subcommittee: Marcus Zimmerman, Andrew Lawrence, Wayne Shenefelt, AJ Johnson, Dean Alatsis, Scott Simons, and Tom Peters

CR 25-04 Considerations and Technical Requirements for a Weather Services Contract RFP [Score: 2.972]

- Investigator: To be determined via RFP.
- Budget: \$100,000
- Chair: Mark Goldstein
- Co-Chair: Dan Whetzel
- Subcommittee: Mike Mattison, Matthew Ouellette, Marcus Zimmerman, Dean Alatsis, Wayne Shenefelt, Randi Feltner, and Tom Peters

CR 25-05 Snowplow Truck Washing Facility Design Templates and RFQ Contract Template [Score: 2.972]

- Investigator: To be determined via RFP.
- Budget: \$125,000
- Chair: Matthew Ouellette
- Co-Chair: Todd Law
- Subcommittee: Jeff Pifer, Carl Fedders, James Morin, Dan Varilek, Ty Winther, Chris Landry, and Tom Peters

CR 25-S1 Synthesis: Best Practices for Use of AVL and Other Vehicle Monitoring Technologies in Employee Relations [Score: 3.778]

- Investigator: CTC & Associates
- Budget: \$25,000
- Chair: Andrew Lawrence
- Co-Chair: Mike Mattison
- Subcommittee: Marcus Zimmerman, Alastair Probert, Paul Denkler, Joe Huneke, Chase Fester (MN), Dan Whetzel, Jessica Andrews, AJ Johnson, and Tom Peters

VOTE – Motion to approve projects - Mike M.; Second – Paul D. Ayes have it. Motion carries.

Update on Projects in Progress

21-01 Grip Sensor Technology and Salt Applications

- Contractor: Western Transportation Institute, Montana State University
- Contract End Date: February 2025 (Extending contract through August 2025)
- Subcommittee: Mike Mattison, Mark Goldstein, James Morin, Nick Evans, Patti Caswell, Emil Juni, Matthew Heinze, Carl Fedders, James Roath, Tom Peters



research for winter highway maintenance

- Status: The literature review, survey, and case studies are complete. Colorado DOT's 2022-2023 RWIS data was provided. A draft version of Task 4 (Algorithm / Decision Matrix) was provided to the subcommittee on February 18 and the project team met on April 10 to review and discuss the deliverable.

21-07 Determining the Migration of Chloride-Based Deicers through Different Soil Types

- Contractor: Washington State University
- Contract End Date: October 2025
- Subcommittee: Aidan Neely, Doug McBroom, Mark Goldstein, James Morin, Patti Caswell, Joe Thompson, Nick Evans, Matt Kraushar, Tom Peters
- Status: The research team is significantly behind schedule in the execution of the laboratory experimental plan, due to underestimated complexity of soil column tests, unexpected delay in reconfiguring the horizontal column tests, and delays in fabricating additional soil columns (to greatly increase the number of soil column tests we could run concurrently, because each test needs 5 replicates). The research team is executing Task 4 alongside and compiling results simultaneously. We generated more test results incorporating Task 3 and Task 4 (additional lab testing using the beet juice/salt brine blend). We reviewed these results to ensure their replicability and had to recalibrate the chloride sensor and re-test the chloride ion concentration in all the leachate samples to maintain the scientific rigor.

22-04 Evaluation of Direct Liquid Application of Salt Brine vs Granular Salt as Measured Through Various Performance and Safety Metrics

- Contractor: University of Wisconsin - Madison
- Contract End Date: December 2025
- Subcommittee: Emil Juni, Matthew Heinze, AJ Johnson, Carl Fedders, Joe Thompson, Jeff Pifer, Paul Denkler, Joe Huneke, Tom Peters
- Status: Literature Review and Survey are complete. Project team met in December 2023 and the subcommittee gave their official approval to move onto Part II (data collection and analysis) of this project. Since the research team struggled with a lack of data collection testing sites during the 2023-2024 winter season, Clear Roads provided them with an additional year for data collection. Data collection in Jefferson, Rock, and Sheboygan Counties in Wisconsin is ongoing through will continue through late spring / early summer of 2025.

23-01 Development of a Public Service Announcement Library

- Contractor: Western Transportation Institute, Montana State University
- Contract End Date: March 2026
- Subcommittee: David Gray, Dan Varilek, Julie Stevenson (PIO; SD), Ty Winther, Ellen Mattila (PIO; ID), Emil Juni, Jeff Pifer, Randi Feltner, Wayne Shenefelt, Tom Peters
- Status: Survey (Task 2) and Review of Existing Materials (Task 3) are complete. The project team met in late 2024 / early 2025 to review a draft Communications Package (Task 4). The research team has revised that deliverable, and the PI / subcommittee chair will be co-presenting this deliverable to the TAC during day 2 of the spring meeting.

23-02 Quantifying the Economic Value of Snow and Ice Operational Success

- Contractor: AECOM Technical Services
- Contract End Date: June 2025



research for winter highway maintenance

- Subcommittee: Mark Goldstein, AJ Younes, Doug McBroom, Randi Feltner, Emil Juni, Joe Thompson, Marcus Zimmerman, Ty Winther, Matthew Heinze, Paul Denkler, Tom Peters
- Status: The Project team has provided Clear Roads with the final survey results (Task 3) and the final Data Input and Methodology memo (Task 4) in March 2025. The economic tool (Task 5) is currently undergoing QA/QC and will be provided to the subcommittee shortly for testing and a meeting will be scheduled to review its functionality.

23-03 Updating the Impact of Capital Projects Decision Support Tool

- Contractor: University of Vermont
- Contract End Date: December 2025
- Subcommittee: Todd Law, Emil Juni, AJ Younes, Joe Thompson, Chris Landry, Paul Denkler, Mark Goldstein, Matthew Oullette, Tom Peters
- Status: The project team met on 8/16 to review the survey responses and discuss a draft mockup of the decision support tool dashboard. The research team is collecting data sources and developing a draft decision support tool for testing

23-04 Solar Radiation Benefits / Chloride Reduction Potential Associated with the Use of Vegetation Management Practices Near Roads

- Contractor: Bolton & Menk, Inc.
- Contract End Date: January 2026
- Subcommittee: Aidan Neely, Jessica Andrews, James Morin, Doug McBroom, Joe Thompson, David Gray, Dan Whetzel, Joe Huneke, Rick Nelson, Tom Peters
- Status: Project team met on 2/24/25 to present the results of current monitoring, plans for use of data from survey participants, and next steps. The research team is still working on Task 3 (Identify, Monitor, and Evaluate Vegetation Removal Sites). That task is not due until 10/31/25.

24-01 Toxicity Standards for the QPL

- Contractor: Western Transportation Institute, Montana State University
- Contract End Date: September 2026
- Subcommittee: Doug McBroom, Patti Caswell, Jasmine Dondlinger, Mike Chapman, Shannon Holland, Jessica Andrews, Randi Feltner, Tom Peters
- Status: Contract signed 4/11/25. Scheduling a project kickoff meeting.

24-02 Effective Pretreatment Methods for Events Beginning as Rain

- Contractor: University of Minnesota
- Contract End Date: Contract not yet executed.
- Subcommittee: Brandy Borja, Matthew Heinze, Randi Feltner, Dan Whetzel, Emil Juni, Dean Alatsis, Anthony Ennas, Samantha Canulli, AJ Johnson, Roger Matthews, Tom Peters
- Status: The scope of work was sent to MnDOT's Research and Innovation on 3/17 for contracting. The initial agreement being drafted by MnDOT.

24-03 Salt Management Training for Non-DOT End Users

- Contractor: University of Minnesota
- Contract End Date: May 2026



research for winter highway maintenance

- Subcommittee: Scott Simons, Mike Mattison, Aidan Neely, Brandy Borja, Matthew Ouellette, Paul Denkler, Anthony Ennas, Samantha Canulli, Tom Peters
- Status: The project kickoff meeting was conducted on 3/31/2025. Meeting notes and slides are posted on the members page. A preliminary survey of winter maintenance topics to be included as part of this project was distributed to the subcommittee on 4/3. The due date for responses is 4/11. A broader survey to the full TAC will be a part of Task 3 (Industry and Agency Survey).

Comprehensive Guide to Prewetting Application Rates and Methods

- Contractor: Originally, Washington State University.
- Contract End Date: Not under contract
- Subcommittee: James Morin, Patti Caswell, Nick Evans, Aidan Neely, Doug McBroom, Joe Thompson, Dan Varilek, Randi Feltner, Dan Whetzel, Joe Huneke, Shannon McIntyre, Tom Peters
- Status: The literature review, survey, and initial synthesis are complete. Task 4 (Experimental Design) is 90% complete but not approved by the project subcommittee. The subcommittee rejected PI's proposal for replacement to lead project and is working on a revised scope of work to be posted as an RFP by MnDOT.

pH Waiver for Deicing Products and the QPL

- Contractor: Originally, Washington State University
- Contract End Date: Not under contract.
- Subcommittee: Patti Caswell, Doug McBroom, James Morin, Mike Chapman, Ty Winther, Jasmine Dondlinger, David Gray, Joe Thompson, Brandy Borja, Tom Peters
- Status: Task 1 is 100% complete. Task 2 (Developing the Test Plan) is 40% complete. The subcommittee rejected PI's proposal for replacement to lead project and is working on a revised scope of work to be posted as an RFP by MnDOT.

2023 synthesis projects

- **23-S1 Management of Video Recordings and Images taken from Truck-Mounted Cameras**
 - Subcommittee: Joe Thompson, Matthew Ouellette, Carl Fedders, Dan Whetzel, Aidan Neely, Tom Peters
 - Status: Final synthesis report will be delivered by end of May.
- **23-S2 Brine Making Practices**
 - Subcommittee: Patti Caswell, Marcus Zimmerman, Emil Juni, Chris Landry, Craig Bargfrede, Tom Peters
 - Status: Final report submitted 4/14/25. Full presentation at the fall 2025 meeting.
- **23-S3 UAV Uses for Winter Maintenance**
 - Subcommittee: Doug McBroom, Wayne Shenefelt, Aidan Neely, Craig Bargfrede, Todd Law, Marcus Zimmerman, Dan Varilek, Mike Kuni, Ryan Sodd, Tom Peters
 - Status: Final synthesis report will be delivered by early May.

2024 synthesis projects

CTC will start two in late May / early June and two near the end of the summer. Start with 24-S2 and 24-S3 as these may bring to light other topics for future research. TAC agrees.

- **24-S1 Methods to Update the Road Report**



research for winter highway maintenance

- Subcommittee: Doug McBroom (MT), Randi Feltner (KY), Dan Whetzel (PA), Craig Bargfrede (IA), Joe Thompson (NY), Chris Landry (ME), Wayne Shenefelt (WY), Joe Huneke (MN), Tom Peters
- **24-S2 Snow & Ice, 2030 – Be Ready for Change within the Snow & Ice Fighting Industry**
 - Subcommittee: Mark Goldstein, AJ Johnson, Andy Lawrence, Carl Fedders, Marcus Zimmerman, Aaron Murra, Matthew Heinze, Chris Landry, Mike Warren, Jeremy McGuffey, Tom Peters
- **24-S3 Update on the Status of AVL/GPS for Winter Operations**
 - Subcommittee: Jim Frye, Jessica Andrews, Randi Feltner, Paul Denkler, David Gray, Dean Alatsis, Carl Fedders, Alastair Probert, Joe Huneke, Tom Peters
- **24-S4 Best Practices for Research Implementation**
 - Subcommittee: Mike Mattison, Dan Whetzel, Craig Bargfrede, Scott Simons, Todd Law, Dean Alatsis, Andy Lawrence, Kevin Hensley, Clark Moe, Tom Peters

Update on the Public Service Announcement Library (CR 23-01)

Need for feedback from the full Clear Roads TAC on the draft PSA module.

- Research team will take more video footage from members, so please send it to them. The link to upload video footage from state agencies may be found [here](#).
- Any additional feedback, please email it to Laura Fay at laura.fay1@montana.edu.

Idaho State Report

- Presented by Ty Winther
- See *Spring 2025 State Reports / Industry Reports / Project Reports* under TAC Meeting Presentations on the members only page.

Proficiency Testing Program for Labs

An update from (AASHTO re:source)

- Presented by Ryan LaQuay
- See *Spring 2025 State Reports / Industry Reports / Project Reports* under TAC Meeting Presentations on the members only page.
- The following are the links for program overview ([Proficiency Sample Overview](#)) and program enrollment ([Enrollment Request Form](#)) to send along to your state Materials Engineer.

New Jersey State Report

- Presented by Samantha Canulli
- See *Spring 2025 State Reports / Industry Reports / Project Reports* under TAC Meeting Presentations on the members only page.

Recently Completed Project Report – Doug McBroom

22-05: Use of Dashboards for Winter Operations

- Presented by Doug McBroom
- See *Spring 2025 State Reports / Industry Reports / Project Reports* under TAC Meeting Presentations on the members only page.



Business Roundtable

- Brad Darr requested that one of our members present on a Clear Roads project at the AASHTO Maintenance Committee's Maintenance Operations TWG in Minneapolis in July.
 - Todd Law volunteered to present on CR 14-02/CR 23-03.
 - Clear Roads will cover the cost of travel.
- Truck Safety Devices (Mark Goldstein)
- Tariffs as they relate to both deicing materials and equipment. (David Gray)
- Hours of operations waived for truckers hauling salt and fuel when a declaration from the Governor. Handful have the same.
- Performance measures (Paul Denkler)
- Proposal to create a subcommittee to determine which training modules need to be updated for CR 12-04 Snowplow Operator and Supervisor Training.
 - **Motion to develop a subcommittee to review and update as necessary the training on the Clear Roads training page – Doug M.; Second – Marcus Z.; Ayes have it. Motion carries.**
 - Subcommittee
 - Co-chairs: Carl and Marcus
 - Members: Craig B., Doug M., Samantha C., Andrew L., Aaron M., Paul D. (delegate a staff member)
 - Greg has begun a research needs and gaps spreadsheet, which can be used as a foundation for this committee's work.

Thursday, April 17, 2025

Communications Report

- Period covered: fall 2024 meeting to spring 2025 meeting.
- 21 new Clear Roads Constant Contact subscribers this period.
- 12,000 unique visitors, up from 5,804.
- 53,622 site interactions, up from 48,144.
- Most-visited web pages: QPL, Training Resources Winter Driving: What To Do When Stranded, Annual Survey of State of Winter Maintenance Data, Request for ELDT (CDL) Training Modules.
- Share the report with your states to show the impact Clear Roads has in the states.

Future Meetings

2025

- Fall Meeting: Bloomington, MN. Week of September 15.
 - MOU with the Embassy Suites Bloomington. Now that the funds for the meeting have been amended into the CTC contract, will sign the contract after this meeting.
 - This will be a joint meeting with Arora and SICOP.
 - Clear Roads will meet on Tuesday and Thursday. Combined meeting with Arora on Wednesday.

2026

- Spring Meeting: Lexington, KY. Week of April 20.
 - Backup: Kansas City, MO
- Fall 2026: Boston, MA. Week of Sept 14.



research for winter highway maintenance

- Mark will send Greg a contact for the Revere Hotel. Budget is \$50,000. Rooms should be less than \$200/night. Greg will reach out to contact after this meeting to sign an MOU.
- Backup: Portland, ME

2027

- Spring Meeting: Boise, ID. Week of April 19
 - Backup: Spokane (or Seattle), Washington
- Fall Meeting: Deadwood, SD. Week of Sept 13
 - Fly into Rapid City. An hour between the airport and Deadwood.
 - Dan has selected the hotel.
 - Backup: Ohio

2028

- Spring Meeting: Kansas. Week of April 17.
- Fall Meeting: California (likely Oakland). Week of Sept 11.
 - Backup for both will be Morgantown, WV.

Recently Completed Project Report

22-03: Effects of Additives in Deicing Salts at Lower Temperatures

- Project Chair: Jessica Andrews
- See *Spring 2025 State Reports / Industry Reports / Project Reports* under TAC Meeting Presentations on the members only page.

Winter Weather Management Technical Service Program (WWM TSP) Report

- Presented by Joe Thompson and Doug McBroom.
- WWM TSP is moving forward with \$4,000 contribution from SICOP. Have three years' worth of funds in reserve.
- Interested in a "When the Weather Meets the Road" workshop.
- Winter Maintenance Wiki at <https://talkinwinterops.com/wiki/winter-maintenance-wiki/>.
 - The Terminology Task Force is reviewing winter terms that various winter maintenance-focused agencies are using. The group meets once a month to define common terms.
- Wednesday (day 2) of the 2025 fall meeting will be a Clear Roads – Aurora joint meeting.
 - Need to formulate an agenda for the joint meeting. What do the members want to hear about? Technology, equipment, etc. Once they know this, they can approach potential presenters. Some ideas include...
 - Workshop – Revamp strategic planning with road weather management research. Build a foundational document that provides guidance for the next 20 years. Winter weather plays a large part of road weather management. What do the winter folks want to see in the document, important issues related to winter weather road management.
 - Data – How are agencies collecting it? How are they using it? How is it imported? How are they sharing it?
 - Salt sustainability – how are states reducing the use of chlorides?
 - RWIS systems. What data is RWIS providing? How are agencies using it? Mobile RWIS stations? Cheaper, easier to maintain? Mini-RWIS supplementing RWIS.
 - Emergency Transportation Operations.
 - AVL.
 - Anything weather-related.
 - Artificial Intelligence (AI) features. What can states do with it? How are others using it?



research for winter highway maintenance

- Process improvement. Integration with RWIS and how to use the information states have with the existing technology to make processes more efficient.
- Connected vehicle data. Coordination of data to help them make decisions. Who is using it? Cost? What is it doing for them?
- NCHRP project – Performance measures for Winter Maintenance. Receive a report out on the study findings. It showed what states are doing for performance measures. Return to speed post storm and grip.
- Aurora highlights their research over the last few years – as well as Clear Roads. Choose a few topics of interest.
- Inviting TRB Road Weather and Winter Maintenance committees. They are both actively seeking to increase state DOT participation.
- RWIS and states' relationships with mapping apps. For example, during incidents on interstates during winter when mapping apps take traffic on back roads... what are other states' experiences?
- Predictive ability using all available roadway data.
- Integration of roadway weather data to improve operations.
- Virtual RWIS – Aurora's experience with it.
- Employee training.
- Showcase a couple of research projects from both Clear Roads and Aurora.
- Connected vehicle data and how Aurora deals with it. How to change that domestic auto makers don't share vehicle data while imports do.
- Share videos from Public Service Announcement Library (CR 23-01)
- AI and connected vehicle information. Combination of them together.
- Sustainable path forward for our industry.
- Does a tour need to be planned? Is there time? We could schedule a tour of DTN's facility. They would be available to provide a tour on Thursday afternoon. The facility is near the Mall of America and the airport.

APWA Report

- Presented by Kevin Hensley
- See *Spring 2025 State Reports / Industry Reports / Project Reports* under TAC Meeting Presentations on the members only page.

Business Roundtable

- AASHTO Snow & Ice Listserv.
 - Greg will send email to the TAC containing links to sign up to the Snow & Ice Listserv and Talkin' Winter Ops podcast.
- Implementation webinars
 - Greg will email members prior to the fall meeting so they can think about possibilities for the upcoming year.
- QPL Update
 - Subcommittee reviews and approves products to get on the QPL.
 - Cleaning up the list. New expiration date for all deicing products of 12/31/30.
 - If there is a product missing from the list, please let Patti know.



research for winter highway maintenance

- The same company (investment company) owns GMCO and Envirotech. Their products may still be labeled with those companies. Patti will add footnotes on the QPL to clarify those situations.
- Virtual RWIS. Are states receiving emails about this? Using it with success?
- Salt – Issues with vendors? Resolution?
- AVL Forum – Next meeting 6/3/25 at 11:00am. Talk frankly without vendors in the room.
 - Send Joe Thompson ideas for topics / agenda items.
- Solar salt for use in brine-making.
- County & Tribal Road closures and no-travel advisories on SD511.
- Pre-emptive interstate closure plans.
- States with chain control regulations.
- State DOT relationships with Google or Waze.
- AJ – In-pavement roadway sensors, separate from RWIS, for black ice detection.
- New salt contracts – considering removing sampling requirements (gradation and moisture) and penalties from them.
- AVL vendors using cameras and AI to tell if plow blades are up or down.

The Passing of the Gavel

- Craig Bargfrede has turned over the chairmanship to Doug McBroom.
- Todd Law the new Vice Chair.

Commonwealth of Virginia Capitol Tour